COMMONWEALTH of VIRGINIA

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MEMORANDUM

TO: State Water Control Board Members

FROM: Ellen Gilinsky, Ph.D.
Director, Water Division

SUBJECT: **Consideration of a Fast Track Rulemaking to Amend the Water Quality Standards Regulation (9 VAC 25-260-185) to Include the October 2007, September 2008 and May 2010 Chesapeake Bay Criteria Assessment Protocols Addenda**

Executive Summary

Staff intends to ask the Board at their June 21-22, 2010 meeting for approval to initiate a rulemaking to amend the Water Quality Standards regulation to include the October 2007, September 2008 and May 2010 Chesapeake Bay Criteria Assessment Protocols Addenda. The staff proposal will be for a fast track rulemaking as the amendment is expected to be non-controversial because these protocols have been developed by U.S. EPA through a collaborative process within the Chesapeake Bay Program. These protocols reflect the best scientific approach for the Bay states to use in assessing attainment of the standards for the Chesapeake Bay and its tidal rivers. These recently published protocols are being used by U.S. EPA to develop the Total Maximum Daily Loads for the Bay and its tidal rivers. EPA has set a December 31, 2010 completion date for the TMDLs.

Background

In 2005 the State Water Control Board adopted standards specifically for the Chesapeake Bay and its tidal rivers. Due to the complex nature of the circulation patterns and varying salinity of the Bay waters the standards regulation also includes reference to criteria assessment procedures published by EPA. Since that initial action, the Board has approved an amendment to the

standards regulation to include reference to updated assessment procedures published by EPA in 2007.

Current Proposal

EPA has continued to refine the assessment procedures as scientific research and management applications reveal new insights and knowledge about the Chesapeake Bay. Each of EPA's updated procedure documents replace or otherwise supersede similar criteria assessment procedures published in earlier documents, but not all of them. Therefore, it is necessary for the Virginia standards to refer to each of the addenda published by EPA.

The 2007 addendum documents numerical Chesapeake Bay chlorophyll *a* criteria and reference concentrations. The 2008 addendum includes refinements to procedures for assessing Chesapeake Bay water clarity and SAV criteria. The 2010 addendum includes guidance to address: 1. how to properly assess dissolved oxygen criteria as the boundary between open water and deep water varies; 2. revisions to the methodology and application of biologically-based reference curves for the statistical-based approach of criteria assessment; and, 3. revisions to the methodology for assessing chlorophyll *a* criteria, which applies to the tidal James River. The wording for the entire revised section of the regulation is shown in **Attachment 1** and includes reference to these addenda as well as several housekeeping wording changes.

TMDLs must be developed in accordance with approved water quality standards. Therefore, these new assessment procedures must be incorporated in the Virginia Water Quality Standards regulation in a timely way so that the Chesapeake Bay TMDLs can be approved by EPA by December 31, 2010 consistent with the new assessment procedures.

Recommendation

1. That the Board authorize the Department to promulgate amendment to **9 VAC 25-260-185** as shown in Attachment 1 for public comment using the fast-track process established in § 2.2-4012.1 of the Administrative Process Act for regulations expected to be non-controversial.

   The Board's authorization should also be understood to constitute its adoption of the regulation at the end of the public comment period provided that (i) no objection to use of the fast-track process is received from 10 or more persons, or any member of the applicable standing committee of either house of the General Assembly or of the Joint Commission on Administrative Rules, and (ii) the Department does not find it necessary, based on public comments or for any other reason, to make any changes to

the proposal.

2. That the Board authorize the Department to set an effective date 15 days after close of the 30-day public comment period provided (i) the proposal completes the fast-track rulemaking process as provided in § 2.2-4012.1 of the Administrative Process Act and (ii) the Department does not find it necessary to make any changes to the proposal.

PRESENTER CONTACT INFORMATION:
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Attachment 1: Proposed amendments to **9 VAC 25-260-185**

ATTACHMENT 1

9VAC25-260-185. Criteria to protect designated uses from the impacts of nutrients and suspended sediment in the Chesapeake Bay and its tidal tributaries.

A. Dissolved oxygen.

Designated Use	Criteria Concentration/ Duration	Temporal Application
Migratory fish spawning and nursery	7-day mean = 6 mg/l (tidal habitats with 0-0.5 ppt salinity)	February 1 - May 31
	Instantaneous minimum = 5 mg/l	
Open water[1]	30 day mean = 5.5 mg/l (tidal habitats with 0-0.5 ppt salinity)	year-round[2]
	30 day mean = 5 mg/l (tidal habitats with > 0.5 ppt salinity)	
	7 day mean = 4 mg/l	
	Instantaneous minimum = 3.2 mg/l at temperatures < 29°C Instantaneous minimum = 4.3 mg/l at temperatures = 29°C	
Deep water	30 day mean = 3 mg/l	June 1 - September 30
	1 day mean = 2.3 mg/l	
	Instantaneous minimum = 1.7 mg/l	
Deep channel	Instantaneous minimum = 1 mg/l	June 1 - September 30

[1]In applying this open water instantaneous criterion to the Chesapeake Bay and its tidal tributaries where the existing water quality for dissolved oxygen exceeds an instantaneous minimum of 3.2 mg/l, that higher water quality for dissolved oxygen shall be provided antidegradation protection in accordance with 9 VAC 25-610-30 A 2.

[2]Open-water dissolved oxygen criteria attainment is assessed separately over two time periods: summer (June 1- September 30) and nonsummer (October 1-May 31) months.

B. Submerged aquatic vegetation and water clarity. Attainment of the shallow-water submerged aquatic vegetation designated use shall be determined using any one of the following criteria:

Designated Use	Chesapeake Bay Program Segment	SAV Acres[1]	Percent Light-Through-Water[2]	Water Clarity Acres[1]	Temporal Application
Shallow Water Submerged Aquatic Vegetation Use	CB5MH	7,633	22%	14,514	April 1 - October 31
	CB6PH	1,267	22%	3,168	March 1 - November 30
	CB7PH	15,107	22%	34,085	March 1 - November 30

	CB8PH	11	22%	28	March 1 - November 30
	POTTF	2,093	13%	5,233	April 1 - October 31
	POTOH	1,503	13%	3,758	April 1 - October 31
	POTMH	4,250	22%	10,625	April 1 - October 31
	RPPTF	66	13%	165	April 1 - October 31
	RPPOH	4	13%	10	April 1 - October 31
	RPPMH	1700	22%	5000	April 1 - October 31
	CRRMH	768	22%	1,920	April 1 - October 31
	PIAMH	3,479	22%	8,014	April 1 - October 31
	MPNTF	85	13%	213	April 1 - October 31
	MPNOH	-	-	-	-
	PMKTF	187	13%	468	April 1 - October 31
	PMKOH	-	-	-	-
	YRKMH	239	22%	598	April 1 - October 31
	YRKPH	2,793	22%	6,982	March 1 - November 30
	MOBPH	15,901	22%	33,990	March 1 - November 30
	JMSTF2	200	13%	500	April 1 - October 31
	JMSTF1	1000	13%	2500	April 1 - October 31
	APPTF	379	13%	948	April 1 - October 31
	JMSOH	15	13%	38	April 1 - October 31
	CHKOH	535	13%	1,338	April 1 - October 31
	JMSMH	200	22%	500	April 1 - October 31
	JMSPH	300	22%	750	March 1 - November 30
	WBEMH	-	-	-	-
	SBEMH	-	-	-	-
	EBEMH	-	-	-	-
	ELIPH	-	-	-	-
	LYNPH	107	22%	268	March 1 - November 30
	POCOH	-	-	-	-

	POCMH	4,066	22%	9,368	April 1 - October 31
	TANMH	13,579	22%	22,064	April 1 - October 31

[1]The assessment period for SAV and water clarity acres shall be the single best year in the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within the data assessment window shall be used.

[2]Percent Light through Water = $100e^{(-KdZ)}$ where K_d is water column light attenuation coefficient and can be measured directly or converted from a measured secchi depth where K_d = 1.45/secchi depth. Z = depth at location of measurement of K_d.

C. Chlorophyll a.

Designated Use	Chlorophyll a Narrative Criterion	Temporal Application
Open Water	Concentrations of chlorophyll a in free-floating microscopic aquatic plants (algae) shall not exceed levels that result in undesirable or nuisance aquatic plant life, or render tidal waters unsuitable for the propagation and growth of a balanced, indigenous population of aquatic life or otherwise result in ecologically undesirable water quality conditions such as reduced water clarity, low dissolved oxygen, food supply imbalances, proliferation of species deemed potentially harmful to aquatic life or humans or aesthetically objectionable conditions.	March 1 - September 30

*See 9VAC25-260-310 special standard bb for numerical chlorophyll criteria for the tidal James River.

D. Implementation.

1. Chesapeake Bay program segmentation scheme as described in Chesapeake Bay Program, 2004 Chesapeake Bay Program Analytical Segmentation Scheme-Revisions, Decisions and Rationales: 1983—2003, CBP/TRS 268/04, EPA 903-R-04-008, Chesapeake Bay Program, Annapolis, Maryland, and the Chesapeake Bay Program published 2005 addendum (CBP/TRS 278-06; EPA 903-R-05-004) is listed below and shall be used as the spatial assessment unit to determine attainment of the criteria in this section for each designated use.

Chesapeake Bay Segment Description	Segment Name[1]	Chesapeake Bay Segment Description	Segment Name[1]
Lower Central Chesapeake Bay	CB5MH	Mobjack Bay	MOBPH
Western Lower Chesapeake Bay	CB6PH	Upper Tidal Fresh James River	JMSTF2
Eastern Lower Chesapeake	CB7PH	Lower Tidal Fresh	JMSTF1

Bay		James River	
Mouth of the Chesapeake Bay	CB8PH	Appomattox River	APPTF
Upper Potomac River	POTTF	Middle James River	JMSOH
Middle Potomac River	POTOH	Chickahominy River	CHKOH
Lower Potomac River	POTMH	Lower James River	JMSMH
Upper Rappahannock River	RPPTF	Mouth of the James River	JMSPH
Middle Rapphannock River	RPPOH	Western Branch Elizabeth River	WBEMH
Lower Rapphannock River	RPPMH	Southern Branch Elizabeth River	SBEMH
Corrotoman River	CRRMH	Eastern Branch Elizabeth River	EBEMH
Piankatank River	PIAMH	Lafayette River	LAFMH
Upper Mattaponi River	MPNTF	Mouth of the Elizabeth River	ELIPH
Lower Mattaponi River	MPNOH	Lynnhaven River	LYNPH
Upper Pamunkey River	PMKTF	Middle Pocomoke River	POCOH
Lower Pamunkey River	PMKOH	Lower Pocomoke River	POCMH
Middle York River	YRKMH	Tangier Sound	TANMH
Lower York River	YRKPH		

[1]First three letters of segment name represent Chesapeake Bay segment description, letters four and five represent the salinity regime of that segment (TF = Tidal Fresh, OH = Oligohaline, MH = Mesohaline and PH = Polyhaline) and a sixth space is reserved for subdivisions of that segment.

2. The assessment period shall be the most recent three consecutive years. When three consecutive years of data are not available, a minimum of three years within the ~~the~~ data assessment window shall be used.

3. Attainment of these criteria shall be assessed through comparison of the generated cumulative frequency distribution of the monitoring data to the applicable criteria reference curve for each designated use. If the monitoring data cumulative frequency curve is completely contained inside the reference curve, then the segment is in attainment of the designated use. The reference curves and procedures to be followed are published in the USEPA, Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and Its Tidal Tributaries, EPA 903-R-03-002, April 2003 and the 2004 (EPA 903-R-03-002 October 2004), ~~and~~ 2007 (CBA/TRS 285-07, EPA 903-R-07-003), 2007 (CBP/TRS 288/07, EPA 903-R-07-005), 2008 (CBP/TRS 290-08, EPA 903-R-08-001, and 2010 (CBP/TRS 301-10, EPA 903-R-

10-002) addenda. An exception to this requirement is in measuring attainment of the SAV and water clarity acres, which are compared directly to the criteria.